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ABSTRACT

In this activity, students construct bird nests and birdhouses. Students research a bird of their choice in order to design a house that will meet that bird's specific needs. The activity works well in conjunction with a high school level woodshop class where students would partner up. This activity requires an 80-minute time period for completion. (Author/SOE)

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ED 480 781

Activity: **Build a Bird House**

GRADE LEVELS: 3-5

SUMMARY:

Students will construct bird nests and birdhouses. The students will research a bird of their choice in order to design a house that will meet that bird's specific needs. This activity works well in conjunction with a 9^{th} – 12^{th} woodshop class whose students would partner up with your class. However this is not a necessity.

LEVEL OF DIFFICULTY

3 - Average

TIME REQUIRED

80 minutes (2 class periods) for the house and nest.

The research component can as long and extensive as the teacher wishes.

COST

Nest: $2 per class

Birdhouse: $0 if scraps donated from vocational class

STANDARDS:

1.1 Identify materials used to accomplish a design task based on a specific property (i.e. weight, strength, hardness, and flexibility).

1.2 Identify and explain the appropriate materials and tools (hammer, screwdriver pliers, tape measure, screws, nails and other mechanical fasteners) to construct a given prototype.

2.1 Identify a problem that emanates from the need for shelter, storage or convenience.

2.3 Identify relevant design features (e.g. size, shape) for building a prototype of a solution to a given problem.

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2.4 Compare natural systems with mechanical systems that are designed to serve similar purposes (e.g. bird's wings as compared to an airplane's wings).

WHAT WILL THE STUDENTS LEARN?

Students will learn:

To describe properties of materials used and why they are good for building a house.

The use of materials, wood and nails or glue, and a tool, the hammer.

The relationship between materials and tools.

Birds need shelter for protection from weather and predators, and to safely hatch eggs.

Different birds require different sized houses.

BACKGROUND INFORMATION:

Introduce the students to tools and materials (wood, hammer, nails, screws, screwdriver, tape measure), and discuss the difference. Also discuss safety precautions they need to practice. Teach students about bird habitats and shelters.

Vocabulary:

Tool-A device used to help accomplish a specific task.
Material-what things are made of (e.g. a nail is a material when it is part of a birdhouse, but can be used as a tool to poke holes in things).

RESOURCES:

http://www.learner.org/jnorth/tm/oriole/BuildNest.html
The construction of an Oriole's nest from the bird's perspective.
http://birding.miningco.com/library/blhousespecs.htm
Birdhouse dimensions for various birds.
http://home.earthlink.net/~lucretius/nests.html
Basics of bird nest construction.

http://www.enature.com/birding/birding_home.asp - Find local birds and find out what they are doing now.

http://www.dvrconline.org/builder.html - Nesting habits of birds of prey

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MATERIALS: *(per group)*

For the house:

wood, (see preparation for specifications on the pieces of wood needed)

hand full - nails (Length should be 1 and half times depth of wood),

1- hammer,

1 - screw drivers,

hand full - Wood screws (Length should be 1 and half times depth of wood)

For the nest:

1 - paper plates (9" diameter or less),

hand full - grass/hay,

hand full - leaves,

hand full - small twigs,

Birds often use human made materials (trash) to build their nests

bits of plastic

3-plastic straws

6' - string,

1 - scissor,

model or picture of nest to show

PREPARATION:

For the birdhouse Option:

A birdhouse built to these dimensions are intended to attract a **chickadee**. Values will vary depending on wood thickness and the bird type (see referance). You may want to investigate what specification would benefit the wildlife in your students area. If possible, arrange a group effort with 9th to 12th grade woodshop students and their teacher. The older students can measure and cut the wood (ahead of time) and buddy with the younger students to watch over them nailing the birdhouses together. If that is not possible, obtain appropriately sized wood

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and glue. Home Depot and other similar hardware stores will often donate wood scraps to schools.

Wood pieces need to be cut to (see birdhouse dimensions worksheet):

1- 6"x 4" x1" w/ hole 1.25" in diameter centered 3" above bottom (front)

1- 6"x 4" x1" (back)

2- 4"x 4" x 1", (top and bottom)

2- 6" x 6" x 1" (sides)

For the nest option:

Students need to collect natural materials as homework or at recess. Have the students go to an area where birds are found, in their neighborhood, to collect the supplies. In rural areas this might be their backyard, for more urban areas this may be a park but could also be along the street. Students should be told and perhaps parents warned, that picking up small pieces of trash is more than appropriate. The birds will use what is available.

DIRECTIONS:

Teach students about bird habitats and shelters.

Introduce the students to tools and materials (wood, hammer, nails, screws, screwdriver, tape measure), and discuss the difference. Also discuss safety precautions they need to practice.

For the birdhouse:

1.The woodshop teacher will give a demonstration of and instructions for the construction of the birdhouse.

2. The students will receive their cut wood pieces.

3. With a woodshop student assisting each group of 2-4 elementary students, the elementary students will nail their birdhouses together. As a follow-up activity, students can design their own birdhouse or come up with ideas to improve the current bird house design (see worksheet).

For the nest:

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Brainstorm and discuss what types of objects birds would use to build their nests. Looking at the model and picture of actual nests create your own birds nest using a paper plate as a base.

Birdhouse design:

After the students have constructed a birdhouse and built their nest, have them research a bird of interest to and have them design a shelter that would meet that bird's particular needs.

INVESTIGATING QUESTIONS:

Why do birds need shelter?

Compare and contrast the nest and the birdhouse.

What materials did we use in constructing the birdhouse and nest?

What tools did we use in constructing the birdhouse and nest?

What safety precautions should you use when using these materials?

REFERENCES:

http://www.geocities.com/Heartland/8108/birdhouse.html

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SAMPLE RUBRIC:

Of the nest, worksheet and birdhouse (assuming the class did all of them)

Three products completed, excellent effort-A

Two products completed, good effort-B

One product completed, minimal effort-C

None completed, no effort-F

Quiz option: Describe which tools were used for which tasks.

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BIRD HOUSE DIMENSIONS

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Name_____

Design your own bird shelter

If Internet access is available, look online for information on birdhouses for different birds.
Pick a species and design a bird shelter using the information you have gotten from building bird shelters in class and online. Draw your design in the space below. Write a few sentences about the pros and cons of your design.

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Was this Activity effective at this grade level (if so, why, and if not, why not)?

What were the Activity's strong points?

What were its weak points?

Was the suggested Time Required sufficient (if not, which aspects of the Activity took shorter or longer than expected)?

Was the supposed Cost accurate (if not, what were some factors that contributed to either lower or higher costs)?

Do you think that the Activity sufficiently represented the listed MA Framework Standards (if not, do you have suggestions that might improve the Activity's relevance)?

Was the suggested Preparation sufficient in raising the students' initial familiarity with the Activity's topic (if not, do you have suggestions of steps that might be added here)?

If there were any attached Rubrics or Worksheets, were they effective (if not, do you have suggestions for their improvement)?

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http://www.prek-12engineering.org/data/d6/BirdHouse.pdf

11) Ball Bounce Experiment, Grades 3-5
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13) Design Packing to Safely Mail Raw Spaghetti, Grades 3-5
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16) Compare Fabric Materials, Grades 3-5
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17) A House is a House for Me, Grades 3-5
http://www.prek-12engineering.org/data/d52/House.pdf

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http://www.prek-12engineering.org/data/d54/BestInsulator.pdf

20) Design a Recycling Game!, Grades 3-5
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